

/257 cont./

804

As a practical means for their calculations, they will even make a small stick the size of an arm span or a handspan they are, nevertheless, individual and casual measurements.

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The arithmetic tables already constitute a serious difficulty for the school children, in spite of being a mere question of memory. Those of better progress do not manage to perform the four operations after /258/ three or four years of attending school. And one notices in all great difficulty in solving the simplest problem in mathematics.

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It seems that it is equally difficult for them to estimate time, as well as distance and area; thus, they are apt to answer that the length of a room is three kilometers and the course of a river, one hundred meters.

c) Astronomy -- Cosmography.

1) The world.

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According to their conceptions, the earth, Di'tá, is a plain covered by a regular and solid spherical calotte, which is called Ö'mã-se (high thing), the sky, with four doors /Port. portas, doors, gates/ corresponding to the four cardinal points, through which the waters of the rivers escape. If these doors were to be closed, the waters would flood the lands and drown all humanity. (Cf. the Legend of the snake Sẽ, p.)

[821]

They differentiate the clouds into oxkô-kururí, the nimbi, and o'mẽ-kururí, cirri.

They call the cardinal points "porta" /door, gate/, Soxpé, and designate them as follows: East, Sfro-ká-soxpé (back door); West, Pó'té-ká-soxpé (front door, to wit, of the river); South, Kũ'pé-ká-soxpé (left door, from which the Uaupés rises); North, Dyakô-ká-soxpé (right door).

2) Heavenly bodies and stars.

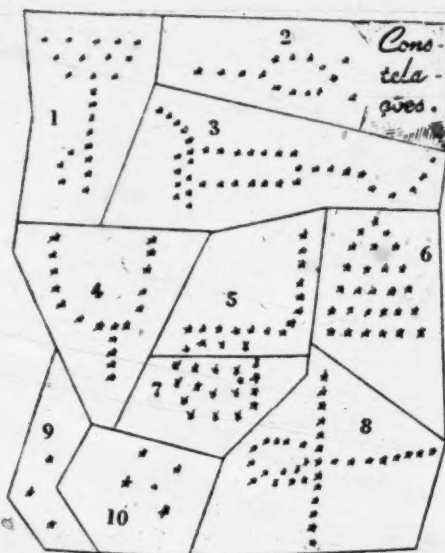
\*192

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They do not know how to explain how the stars, Yõxkõá, were formed. All the constellations, however, have a legendary origin. They even assert that the sun, the moon, and the stars are people, Maxsã, according to their legends. As confirmation, it is to be

\* 192  
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/260/



/Constellations/

1. Aña, ray; 2. Pamō dōxkā, piece of tatu /armadillo/; 3. Yaf pwé-ro, high water of the onça /jaguar/; 4. Daxsyā, shrimp;
5. Syō-a yaxpū, adze handle; 6. Waf kaxsā, fish platform;
7. Kaf sārītō, parakeet enclosure; 8. Yehé, garça /heron/;
9. Dyayó, otter; 10. Bōō, piranha.

#### 4) Time and the seasons.

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[821]

Today they have a term to indicate the year, Kōmā (plural Kōmārī) (8).

8. According to what some of our informants have stated, the term Kōmā originally indicated only the time of the less abundant rains, which runs from September to March. The period of high water, which ordinarily extends from March to September, is called Pwé-kō. That period of 10 to 15 drier days, with little or no rain (which is truly rare), an appropriate

\* 192 /260 cont./

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/footnote 8 cont./ time for the burning of the clearings, is called Kōmā-rō (Uaupés kōmā-nō), summer, maturity.

which is the interval between one period of low water and another in the rivers. Perhaps by the physiological reactions, but especially by the phases of the moon, they distinguish the period of the lunar cycles or months, and they call it /261/ by the term Muhf-pū (9).

9. It also seems, according to some information obtained, that more remotely they did not distinguish lunar cycles or periods, corresponding to the months. It is certain that the term muhf-pū (plural muhf-pūrf; on the Uaupés muhf-pūrf), as corresponding to the word month, is not only of recent usage, but is also not very generalized.

which applies to both the sun and the moon, as we have said. The latter, when one wants to distinguish it from the sun, is called Yamf-ka muhf-pū, sun-of-the-night. There does not exist, however, a term to indicate the week (10).

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10. On the rivers Içana and Aiari we saw a denticulated ruler with transverse strokes serving as a calendar to mark the days of the week and of the month. A slip-knot of tucum would be moved day by day from one denticulation to another. Koch G. (Z. I. 298) reports that the Jurití also had a stick with grooves for their calculations: on one of the flattened ends the grooves marked the days of travel as far as the Lago-do-espelho /Lake of the mirror/ (Uaruá-lake), on the other, the days of the return trip.

\* 192  
• 805

/261 cont./

They only know two seasons, those that really exist, that is, the summer (dry season or low water of the rivers), Wextíro or kōmā-rō, and the winter (high water), Pwé-kō.

The year starts, according to the way they formerly reckoned, in the summer or low water of the Uaupés, when they devoted themselves to felling the trees and the clearings.

The 1st month corresponds to half of August to the middle of September and is called Pūrī Pwé-ro (which means high water of the leaves).

The 2nd, ā'rē puxtiró (blossoming of the pupunha tree), time of felling the trees and burning.

The 3rd, āña pwé-ro (high water of the ray or of Venus /final parenthesis is missing/, because one notices an increase of water in the rivers. It is what is called on the Amazon "repiquete /oscillation of the waters immediately after the low water in the great rivers/ of the dead."

The 4th, āña pwé-ro pityá (the high water of the ray ends), the dry season starts.

The 5th, mē'rē kōmā (time of the ingá).

The 6th, Kōmā wáaro (the year goes), time for planting mandioca.

The 7th, ā'rē kōmā (time of the pupunha), the time for the big caxiris.

The 8th, mā'mā kōmā (new year).

The 9th, Wamā petiró (end of the time of the umarí).

The 10th, Yáí õxsé-ka pwé-ro (high water of the whiskers of the onça /jaguar/).

The 11th, Yõxkwātéro pwé-ro (high water of Yõxkwātéro).

The 12th, Yõxkwātéro pwé-ro pitiró (end of the high water of Yõxkwātéro).

/262/ We were unable to learn whether these divisions of the months correspond /the line that follows these words in the original source belongs in the next paragraph; the one that belongs here is missing/.

/262 cont./

• 805  
[115]

A Tukano by the name of Dorotéia Brito, with decades of contact with the schools of the Salesian Sisters, furnished us a list of 12 months, with the corresponding names in Portuguese. As it will be seen, there is only partial correspondence of the names with the preceding list, which was obtained for us by Padre Antonio Giaccone. Dorotéia explained the origin of the names as being that of the figures which they seem to see in the clouds (sic). It is to be noted that it coincides with the names of the constellations, precisely as the ancients used to divide the months by the constellations.

\* 192  
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These are the names of the months:

January -- Ma'mā bahwarī muhf-pū (new month appeared)  
February -- Daxsyā pixkō-rō (shrimp tail)  
March -- Dyā-yō (otter)  
April -- Yaf pwē-ro (high water of the onça)  
May -- wārā (animal-sloth)  
June -- Axpā kaxsā (crab platform)  
July -- Pamō pwē-ro (high water of the tatu)  
August -- Wai kaxsā (fish platform)  
September -- Syō-a yaxpū (adze handle)  
October -- Yōxkwāterō (morning star)  
November -- Aña (ray)  
December -- Yaf ōxpō (body of the onça)

# 5) The day.

They know, with enough approximation, how to calculate the hour of the day by the height of the sun. They do not, however, have calculations of years, months, weeks, and days; nor do they know how to tell what date we are at.

They distinguish the following hours of the day:  
boreá-māhoatise -- (literally, before the light or dawn rises), around four in the morning

Boré-kease -- dawn

/263/ Boré-ye-yōdāse -- more light

muhf-pū māhōu-tyase -- (sunrise), six in the morning

/263 cont./

\*192  
• 805  
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Axáí māhōá:ti wá:ró -- (the heat begins to rise), around nine in the morning

Axáí māhōá:ti daharítero twa'tá nō'ká-nfīm -- (the heat increases, the time of returning draws near), around ten o'clock

Daharí-tero -- (time to return, let us say, from the clearing), around 11-12 o'clock

ōmā-ko dexkó -- (midday), around 12 o'clock

Daharítero māhōá-nfīm dōhōagō -- (the sun rose and sank after the time to return), around one o'clock

Tōréáro dexkó -- (half the descent of the sun), around 2-3 o'clock

Sahāgō wemf-māhā -- (the sun is going in), around 4 o'clock

Sahā-wá:pi-māhā -- (the sun went in), around 6 o'clock

Nai-kea wá: -- (it is getting dark), around 7 o'clock

Nāyá-wá:māhā -- (it got a little darker), around 7 or 8 o'clock

Yamf nā-māhā -- (the night advanced), around 9 o'clock

Yamf-ka bwí -- (above the night, late at night), around 10 o'clock

Yamf dexkó -- (midnight), around 12 o'clock

d) Natural Sciences.

1) Ideas about nature.

\*192  
825  
a) There are reminiscences of an old belief, according to which they judged that all the animals were "people," maxáí. Some stated to us categorically that the animals are "people." Confirmation of this belief perhaps is the fact that in the Tukano language all the animals are of the masculine gender; whereas all the inanimate beings are of the neuter gender.

When they catch an animal or group of animals, for example, deer, anta, etc., tarrying to drink water or to lick a stone (cf. anta sucker, VI -- 5, b (2), Note 73), they think that these animals are besotted because they have spent a night of dances and orgies.

They likewise explain that the piracema /school of fish/ is a large concentration of fish solemnizing a caxirí.

/264/ There is a species of white vulpídeos with some black feathers and called "baaró" (known also by the regional name of "tesoura" /Muscivora tyrannus/), which at certain times appear in flocks looking for worms. Being light in weight and having abundant

coitus. First building a small fire, the couple bathes; they have coitus and bathe again. The ancestral spirits add power to the water, that promotes pregnancy. Because of its connubial use the canoe landing is thus a sanctuary of another kind, at night restricted to those who are going to use it for the proper purpose. When the last married couple has left, the young men take over. They bathe off the canoe landing, sounding the ancestral trumpets that have been hidden somewhere along the river bank. Regular bathing with the horns gives strength and sexual potency.

People arise for the day's activities sometime before dawn. Thereafter, the canoe landing is the scene of secular activity, women and girls drawing water, men readying their canoes for fishing, and the young play pack frolicking. In the high heat of the day the women return from their manioc gardens to bathe and refresh themselves. In effect, there is a secular and a sacred period in canoe landing activities. The secular part of the day is from dawn to a tropical four o'clock in the afternoon, when the first guests may be expected to arrive if there is a drinking party or a ceremony. The sacred part is from after four o'clock until dawn. Even on ordinary days, activities slacken at the river by late afternoon. On ceremonial days the distinction of a sacred and a secular period holds strongly.

## BOUNDARIES

The clearing delimits the effective area of habitation, but not the full area of a community. This territory runs along a stretch of river and is usually demarcated by a *caño* or creek. On the Cuduiari these small tributaries run into the main stream at almost regular intervals. A principal habitation is ordinarily along the main stream, which is the preferred site. However, the requirements of slash-burn horticulture necessitate a periodic circulation allowing for three to five years at each site. Depending upon the particular conformation of the land with respect to the danger of flooding, a community may be able to move along the banks of the main stream, preparing its new clearing adjacent to the old. It may, on the other hand, be forced to move up a *caño*, with its connotation of lower status. If it is required to spend a period in a *caño*, it has a cyclical existence, of being in a relatively poor state when it is off the main stream and returning to an epigone when it re-establishes itself on the main stream. When I came to live among the *Bahúkiwa* they had just come from a *caño* phase and were in an expansive mood at having moved onto the Cuduiari proper again. *Caño* dwellers are self-conscious; they enter

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(114)

- 133 50 THE CUBEO  
 (484) The opposite shore is close at hand and the entire  
 (502) river can be traversed downstream in two days and upstream in four.  
 (502) The Vaupés, the main stream, is a mighty river, also swift, rocky,  
 and guarded by cataracts than can be perilously "shot" in high water  
 and portaged at other times. It is a deep river with distant banks,  
 in places resembling a sea.
- 361 During the two "dry" seasons, *ihíbo* (October-December, February  
 132 and March), the Indian communities are perched on high banks, in  
 (317) many places clayey and sources of ceramic clay. Access is difficult;  
 (417) the steep, often slippery slopes are hard to manage unless the people  
 have troubled to provide wooden steps or a handrail. At the height  
 of the June, or great, rains, the flood reaches to the clearing, and the  
 river is brought close. A community with its plantations is then an  
 island, the low-lying country a vast lake.
- 221 The Cubeo are more pleased with low water than with high. High  
 132 water, to be sure, does not threaten cultivations, which are always  
 on high ground, and flooding facilitates river travel, yielding shorter  
 routes over ordinarily sinuous turnings of the river. But the seasons  
 of high water (*ildkoro*) (May-August and January) bring relative  
 scarcity even though bitter manioc is an unfailing crop. Fish and  
 game are then most difficult to catch. At the bottom of low water,  
 fish are scarce but game, drawn to the dwindling streams, is now  
 abundant. The peak seasons, when game and fish are both abundant,  
 are after the beginning of the rains, when the rivers are filling in  
 November, and at the conclusion of the rains in July, when the rivers  
 have begun to fall off. The Cubeo render *ihíbo* as summer and  
*ildkoro* as winter. They also refer to seasons as *kwaíno* (falling river)  
 and as *edduaiya* (growing river).
- 221 Thus, while the Cubeo normally do not experience famine or,  
 261 for that matter, serious deprivation at any season, the periods of  
 132 glut are short, one falling roughly between October and December,  
 and the other a minor dry season between February and April. During  
 these seasons fish need only be scooped out of the drying streams,  
 game - tapir, peccary, deer, capybara, and para - crowds the river  
 banks, and the manioc yield is at its peak. These are favorable seasons  
 for ceremony - initiation into the ancestral cult, fish dances, deer  
 dances, mourning rites, and the most frequent round of drinking  
 parties.<sup>1</sup> The seasons, however, lack abruptness. The rains increase  
 and then decrease. Neither economic nor ceremonial life need be  
 824 precisely geared to a season.
- 222 While the Cubeo are a true riverine people, knowledgeable about  
 (805) <sup>1</sup> The year is reckoned from the dry season, since this is the time when manioc  
 gardens are extended or new clearings started.